

NEW PENNSYLVANIA COUNTY OCCURRENCES FOR *BELLIS PERENNIS*, *HIBISCUS MOSCHEUTOS*, *LAMIUM MACULATUM*, AND *ROBINIA HISPIDA*

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ABSTRACT

Range extensions to Butler County for *Bellis perennis* and *Hibiscus moscheutos*, Crawford County for *Lamium maculatum*, and both Butler and Crawford counties for *Robinia hispida* are reported. All populations are well established. The importance of the range extension for *Bellis perennis* rests in the fact that the species can be weedy or invasive. Use of *Hibiscus moscheutos* as a landscape accent in part contributes to its spread. However, its proclivity to set seed as well as to displace other native shoreline species is indicative of the potential for being invasive. The range extension for *Lamium maculatum* potentially represents a very recent introduction to a county that has been botanized since the early 1800s. The importance of the range extension of *Robinia hispida* rests in the fact that the species has been identified as one which invades natural areas in the United States.

RESUMEN

Se citan extensiones de área hasta el condado de Butler de *Bellis perennis* e *Hibiscus moscheutos*, condado de Crawford para *Lamium maculatum*, y condados de Butler y Crawford para *Robinia hispida*. Todas las poblaciones están bien establecidas. La importancia de la extensión del rango para *Bellis perennis* reside en el hecho de que esta especie puede ser una mala hierba o invasiva. El uso de *Hibiscus moscheutos* para realzar el paisaje contribuye en parte a su difusión. Sin embargo, su potencial para producir semillas así como para desplazar a otras especies vecinas es indicativo de su potencial para convertirse en invasiva. El rango de extensión para *Lamium maculatum* representa potencialmente una introducción muy reciente en un condado que ha sido herborizado desde principios de los 1800s. La importancia del rango de extensión de *Robinia hispida* reside en el hecho de que esta especie ha sido identificada como una de las que invaden áreas naturales en los Estados Unidos.

Bellis perennis L., the English daisy, is an invasive (Anonymous 1), low growing, perennial herb in the Asteraceae that is distributed throughout much of eastern North America and parts of western North America to Alaska (Britton & Brown 1913; Magee & Ahles 1999; USDA, NRCS 2011). The species was introduced from its native range of Europe and part of northern Africa and the far eastern regions of the Middle East (Bailey 1949; Magee & Ahles 1999; Euro+Med 2006–2011) and is now naturalized in parts of North America (Britton & Brown 1913; Fernald 1950). In Pennsylvania the species appears to be more common throughout the eastern part of the state than the western part of the state though typically considered to be sparsely scattered and only locally common wherever it occurs (Wherry et al. 1979; Rhoads & Klein 1993; Morton et al. 2007; Morton & Speedy 2008). Despite some recent evidence to the contrary (Morton & Speedy 2007, 2011) for the Pennsylvania counties of Washington and Indiana respectively, the species is probably more common than the published reports would suggest. Essentially all of the populations we have encountered occur in lawns associated with high sunlight, a habitat not routinely surveyed for botanical specimens, though not uncommon for escaped cultivars (Bailey 1949). In some cases entire lawns are infiltrated. The species is deemed weedy and/or invasive in the U.S. though technically not in any specific county (Anonymous 1; Uva et al. 1997; Whitson et al. 1996).

The species forms a low dense tufted mat and stands no more than about 15 cm in height, though typically 7–10 cm. The elliptical to obovate to orbicular leaves are basal, arranged in rosettes, hairy, and with a winged petiole. The flowering heads are solitary with yellow disk and white- to rose-colored ray flowers. The latter are numerous (Britton & Brown 1913; Fernald 1950; Gleason & Cronquist 1963; Rhoads & Block 2000). The flowering heads are nyctinastic, closing from dusk to possibly mid-morning on a daily basis. Flowers also remain closed throughout overcast days. In both of these cases the populations are rendered more inconspicuous.

Several natural populations have been observed in Butler County, Pennsylvania over the past several years, including one in the lawn next to Patterson Hall on the main campus of Slippery Rock University. Like-

wise, several populations have been observed along Route 8 from Harrisville to Butler, including the grassy median between the sidewalk and roadway in Harrisville proper, in both of the town's cemeteries, in the lawn of the Old Stone House Museum property, a historic 1822 wayside inn owned by the Pennsylvania Historical and Museum Commission though administered by Slippery Rock University, and at residences bordering and in the vicinity of the Jennings Environmental Education Center.

Voucher specimen: **PENNSYLVANIA. Butler Co.:** Harrisville, across the street from Gun World, open, grassy median, 14 Jun 2011, J. Chmielewski 3218 (SLRO).

Hibiscus moscheutos L., the crimsoneyed rosemallow, is an herbaceous, annual-perennial sub-shrub in the Malvaceae which is native to North America [though listed as naturalized from Europe by Magee and Ahles (1999)] and occurs from Florida to New Mexico and Utah in the south, northeastward to Massachusetts, southwestern Ontario, and Wisconsin, though not Colorado and Arkansas (Britton & Brown 1913; Fernald 1950; USDA, NRCS 2011). The species is not easily confused with others. Though treated as synonyms today, *H. palustris* L. and *H. moscheutos* were in the past separated on the basis of flower color, the pubescence of style branches or lack thereof, and the occurrence or lack of a crimson center (Britton & Brown 1913; Bailey 1949; Fernald 1950; Magee & Ahles 1999). Individuals of *H. moscheutos* are multi-stemmed, erect, and to 2+ m in height. Our specimens were typically less than 1.5 m in height. The large leaves were pubescent on their underside and generally shallowly lobed below. The large pink flowers (10+ cm in width) which occurred at the Moraine State Park site lacked the distinctive crimson center that was historically considered characteristic of the species and in that regard are more typical of the *palustris* (Connecticut Botanical Society 2011) morphotype. The Route 8 population had flowers that were whitish with a conspicuous crimson center.

These represent the first two collections of *H. moscheutos* from Butler County. Previous accounts of the species from western Pennsylvania included two sites from northeastern Erie County, one site from northeastern Allegheny County, and one site from southeastern Fayette County (Rhoads & Klein 1993; USDA, NRCS 2011). The Fayette County site is not currently included in the flora of Pennsylvania website (Pennsylvania Flora Project 2011), nor cited by Morton and Speedy (2008).

Inasmuch as this obligate wetland species occurs in shallow waters associated with ditches, marshes, and swamps occasionally in the southeastern (Berks, Bucks, Chester, Dauphin, Delaware, Lancaster, Lehigh, Northampton, and Philadelphia Counties) and western parts of the state (Wherry et al. 1979; Rhoads & Block 2000), its true significance at the Moraine State Park site rests in the fact that the population consists of hundreds, if not thousands of individual plants and has displaced other native shallow water or shoreline species. The species dominates the shoreline to 5+ m inland around the periphery of the unnamed cove from the terminus of Big Run Road to the Big Run Arm of Lake Arthur. Further, where the cove abuts US 422 the population extends up the elevated gravel berm to the edge of the roadway. The Route 8 population numbers only a single individual with greater than a dozen shoots. Last year=s shoots were fewer in number. The specimen occurs on one of the lower tiers of a man-made retention pond at the edge of a paved parking lot in association with *Coronilla varia* L., *Dipsacus fullonum* L., *Solidago altissima* L., and *Symphytotrichum pilosum* (Willd.) Nesom. Whether the occurrence of the population represents natural colonization or is a consequence of seeding is unknown. Regardless, it has persisted for the last three seasons.

Locally the species is used as a landscape accent and is sold at many nurseries and garden centers affiliated with box stores. Its proclivity to set seed, formation of large colonies and concurrent displacement of other shoreline species, and use as a horticultural plant may result in further spread. The species clearly has the potential to be invasive.

Voucher specimens: **PENNSYLVANIA. Butler Co.:** Lake Arthur, Moraine State Park, end of Big Run Road, shoreline and into shallow water around the entire unnamed cove, 40°55.344'N, 080°04.759'W; elevation ca. 437 m, 25 Aug 2009, J. Chmielewski 3209 (SLRO); Butler, Route 8, 0.6 mi E of Mercer Road, in drainage retention area; 40°54.353'N, 079°55.214'W, 19 Sep 2010, J. Chmielewski 3210 (SLRO).

Lamium maculatum L., the spotted henbit (dead-nettle), is an herbaceous perennial in the Lamiaceae that was introduced from Eurasia though has escaped cultivation to roadsides, cultivated fields, and waste ground

from South Carolina and Tennessee north to Ontario, Quebec, and Newfoundland in the east and Idaho, Oregon, Washington, and Alaska in the west (Fernald 1950; USDA, NCRS 2011). The occurrence of the species in western Pennsylvania (Rhoads & Klein 1993), including Fayette county (Morton & Speedy 2008), is apparently a more recent event than was its occurrence in the eastern and central parts of the state (Wherry et al. 1979). Despite the fact that Crawford County has been botanized since the early 1800s Morton et al. (2007) did not report on the occurrence of the species. This would suggest that introduction and establishment are recent events.

The species is easily recognized by the whitish stripe along the midrib of the petiole, ovoid to deltoid leaves with crenate-dentate margins, as well as the large 2+ cm long pinkish corolla and single toothed lateral lobe. The creeping stems are slender, somewhat hairy, branched and ascending to 60 cm, though commonly less (Britton & Brown 1913; Fernald 1950; Rhoads & Block 2000).

This most northwestern population in Pennsylvania sparsely covered an area several meters in diameter between the edge of a woodlot and roadside and consisted of over 50 erect shoots at various stages of floral development. Based on size alone the population must have persisted for at least a decade despite the impacts of roadside mowing.

Voucher specimen: **PENNSYLVANIA. Crawford Co.:** Linesville, Fries Road, approximately 300 m E of Forest Drive, W of the Pymatuning Laboratory of Ecology housing facility, shaded edge of woods, 13 Jun 2011, J. Chmielewski 3217 (SLRO).

Robinia hispida L., the bristly locust, is a multi-branched, erect, rhizomatous shrub that is native to dry woods, thickets, and slopes of the more hilly-mountainous regions of Georgia, North Carolina, Tennessee, and Virginia (Britton & Brown 1913; Bailey 1949; Fernald 1950). The species is commonly cultivated north of its home range and is considered to be aggressively invasive in Michigan, New Jersey, Ohio, Pennsylvania, and Washington (Wherry et al. 1979; Rhoads & Klein 1993; Rhoads & Block 2000; USDA, NRCS 2011). In the lower 48 states the species is only absent from Arizona, Idaho, Montana, Nevada, North Dakota, South Dakota, and Wyoming (USDA, NRCS 2011). The species has been introduced to both Nova Scotia (Zinck 1998) and Ontario (Newmaster et al. 1998) in Canada. On numerous occasions the species has escaped cultivation and spreads locally by suckers (Britton & Brown 1913; Fernald 1950). The species is deemed invasive in 614 counties collectively within Michigan, New Jersey, Ohio, Pennsylvania, and Washington (Anonymous 2)

Growing to a height of about 3 m, its most distinctive feature, and that which separates it from other species in the genus is the conspicuous bristly, glandular brown hairs which cover the branches, peduncles, petioles, and rachises. The compound leaves bear 3–6 pairs of rounded leaflets. The 2.5–3 cm long rose-pink colored flowers occur in showy racemes of 3–10 flowers from May–June (Bailey 1949; Fernald 1950; Rhoads & Block 2000)

The species was previously reported from several counties in eastern and more or less central Pennsylvania as well as Allegheny, Armstrong, Beaver Washington, and Westmoreland counties in southwestern Pennsylvania and Erie and Warren counties in the northwestern portion of the state (Wherry et al. 1979; Rhoads & Klein 1993; Morton & Speedy 2007). The two new populations from Butler and Crawford counties respectively adjoin the southwestern and northwestern county groupings mentioned above.

Voucher specimens: **PENNSYLVANIA. Butler Co.:** Lake Arthur, Moraine State Park, Hilltop Trail, open, grassy slope, numerous, 14 Jun 2011, J. Chmielewski 3216 (SLRO). **Crawford Co.:** Meadville, Ernst Woods Bike Trail on the E side of Mercer Pike, between forest edge and edge of paved trail, several locations; 13 Jun 2011, J. Chmielewski 3211 (SLRO).

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